



# EBERLINE SERVICES

0064728

September 21, 2004

Mr. Steve Trent  
Fluor Hanford Inc.  
825 Jadwin Avenue  
Richland, WA 99352

**RECEIVED**  
MAY 03 2005

Reference: P.O. #630  
Eberline Services R4-07-142-7055, SDG H2645

**EDMC**

Dear Mr. Trent:

Enclosed is the data report for two solid samples designated under SAF No F04-015 received at Eberline Services on July 23, 2004. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

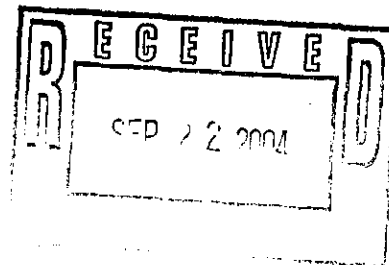
Sincerely,

*Melissa C. Mannion*

Melissa C. Mannion  
Senior Program Manager

MCM/njv

Enclosure: Data Package



Analytical Services  
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## 1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H2645 was composed of two solid (soil) samples designated under SAF No. F04-015 with a Project Designation of: 200-MW-1 Characterization Sampling and Analysis - Soil.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

## 2.0 ANALYSIS NOTES

### 2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

### 2.2 Technetium-99 Analyses

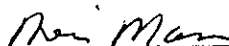
No problems were encountered during the course of the analyses.

### 2.3 Iodine-129 Analyses

No problems were encountered during the course of the analyses.

### Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

  
\_\_\_\_\_  
Melissa C. Mannion  
Senior Program Manager

9/21/4  
\_\_\_\_\_  
Date

EBRLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG\_H2645

S U M M A R Y   D A T A   S E C T I O N

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J. Dutierrez  
Prepared by  
Mel Mann  
Reviewed by

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 09/02/04

# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2645

### ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

#### SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

#### PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

#### WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

#### METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

#### LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

#### REPORT GUIDES

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#### SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG H2645

## ABOUT THE DATA SUMMARY SECTION

### DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

### MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

### DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

### METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

### REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

### REPORT GUIDES

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### SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-RG  
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Report date 09/02/04

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055

Contact Melissa C. Mannion

## SAMPLE SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2645

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B197D7	216-A-4 Crib; 0.5'-3.0'	SOLID		R407142-01	F04-015	F040-015-027	07/19/04 10:53
B197D8	216-A-4 Crib; 0.5'-3.0'	SOLID		R407142-02	F04-015	F040-015-028	07/20/04 12:47
Method Blank		SOLID		R407142-04	F04-015		
Lab Control Sample		SOLID		R407142-03	F04-015		
Duplicate (R407142-01)	216-A-4 Crib; 0.5'-3.0'	SOLID		R407142-05	F04-015		07/19/04 10:53
Spike (R407142-02)	216-A-4 Crib; 0.5'-3.0'	SOLID		R407142-06	F04-015		07/20/04 12:47

SAMPLE SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-CS

Version 3.06

Report date 09/02/04

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

## QC SUMMARY

SDG 7055  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG H2645

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7055	F040-015-027	B197D7	SOLID	95.6	63.85 g		07/23/04	4	R407142-01	7055-001
	F040-015-028	B197D8	SOLID	96.1	94.76 g		07/23/04	3	R407142-02	7055-002
		Method Blank	SOLID						R407142-04	7055-004
		Lab Control Sample	SOLID						R407142-03	7055-003
		Duplicate (R407142-01)	SOLID	95.6	63.85 g		07/23/04	4	R407142-05	7055-005
		Spike (R407142-02)	SOLID	96.1	94.76 g		07/23/04	3	R407142-06	7055-006

QC SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-QS  
Version 3.06  
Report date 09/02/04

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055

Contact Melissa C. Mannion

## PREP BATCH SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2645

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED						QUALIFIERS	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG		MS/ORIG
Beta Counting												
TC	SOLID	Technetium 99 in Soil	7095-092	10.0	2			1	1	1/1		
Gamma Spectroscopy												
I	SOLID	Iodine 129 in Soil	7095-092	10.0	2			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Soil	7095-092	10.0	2			1	1	1/1	1/1	X

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE

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Report date 09/02/04



# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

## WORK SUMMARY

Client Hanford  
Contract No. 630  
Case no SDG H2645

CLIENT SAMPLE ID		LAB SAMPLE ID								
LOCATION	MATRIX	COLLECTED			SUF-					
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
B197D7		R407142-01	7055-001	H		08/18/04	08/27/04	MWT	Tritium in Soil	
216-A-4 Crib; 0.5'-3.0'	SOLID	07/19/04	7055-001	I		08/18/04	08/27/04	MWT	Iodine 129 in Soil	
F040-015-027	F04-015	07/23/04	7055-001	TC		08/23/04	08/27/04	MWT	Technetium 99 in Soil	
B197D8		R407142-02	7055-002	H		08/18/04	08/27/04	MWT	Tritium in Soil	
216-A-4 Crib; 0.5'-3.0'	SOLID	07/20/04	7055-002	I		08/19/04	08/27/04	MWT	Iodine 129 in Soil	
F040-015-028	F04-015	07/23/04	7055-002	TC		08/23/04	08/27/04	MWT	Technetium 99 in Soil	
Method Blank		R407142-04	7055-004	H		08/18/04	08/27/04	MWT	Tritium in Soil	
	SOLID		7055-004	I		08/20/04	08/27/04	MWT	Iodine 129 in Soil	
	F04-015		7055-004	TC		08/20/04	08/27/04	MWT	Technetium 99 in Soil	
Lab Control Sample		R407142-03	7055-003	H		08/18/04	08/27/04	MWT	Tritium in Soil	
	SOLID		7055-003	I		08/19/04	08/27/04	MWT	Iodine 129 in Soil	
	F04-015		7055-003	TC		08/20/04	08/27/04	MWT	Technetium 99 in Soil	
Duplicate (R407142-01)		R407142-05	7055-005	H		08/18/04	08/27/04	MWT	Tritium in Soil	
216-A-4 Crib; 0.5'-3.0'	SOLID	07/19/04	7055-005	I		08/20/04	08/27/04	MWT	Iodine 129 in Soil	
	F04-015	07/23/04	7055-005	TC		08/20/04	08/27/04	MWT	Technetium 99 in Soil	
Spike (R407142-02)		R407142-06	7055-006	H		08/19/04	08/27/04	MWT	Tritium in Soil	
216-A-4 Crib; 0.5'-3.0'	SOLID	07/20/04								
	F04-015	07/23/04								

## COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
H	F04-015	Tritium in Soil	TRITIUM_COX_LSC	2			1	1	1	1	6
I	F04-015	Iodine 129 in Soil	I129_SEP_LEPS_GS	2			1	1	1		5
TC	F04-015	Technetium 99 in Soil	TC99_TR_SEP_LSC	2			1	1	1		5
TOTALS				6			3	3	3	1	16

## WORK SUMMARY

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## SUMMARY DATA SECTION

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Lab id EBRLNE  
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Form DVD-CWS  
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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

R407142-04

Method Blank

## METHOD BLANK

SDG <u>7055</u>	Client/Case no <u>Hanford</u>	SDG <u>H2645</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R407142-04</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7055-004</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F04-015</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	-0.111	0.13	0.23	400	U	H
Technetium 99	14133-76-7	0.224	0.38	0.60	15	U	TC
Iodine 129	15046-84-1	0.120	0.51	1.2	2.0	U	I

200-MW-1 Characterization Sampling

QC-BLANK 48413

METHOD BLANKS

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SUMMARY DATA SECTION

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>09/02/04</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

R407142-03

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7055</u>	Client/Case no <u>Hanford</u>	SDG <u>H2645</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R407142-03</u>	Client sample id <u>Lab Control Sample</u>	
Dept sample id <u>7055-003</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F04-015</u>	

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	11.0	0.37	0.25	400		H	11.9	0.48	92	84-116	80-120
Technetium 99	114	4.8	0.53	15		TC	120	4.8	95	83-117	80-120
Iodine 129	143	1.9	<u>2.3</u>	2.0		I	127	5.1	113	82-118	80-120

200-MW-1 Characterization Sampling

QC-LCS 48412
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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>09/02/04</u>

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

R407142-05

B19707

## DUPLICATE

SDG <u>7055</u>		Client/Case no <u>Hanford</u>		SDG <u>H2645</u>
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>		
DUPLICATE		ORIGINAL		
Lab sample id <u>R407142-05</u>	Lab sample id <u>R407142-01</u>	Client sample id <u>B19707</u>		
Dept sample id <u>7055-005</u>	Dept sample id <u>7055-001</u>	Location/Matrix <u>216-A-4 Crib; 0.5'-3.0'</u> <u>SOLID</u>		
	Received <u>07/23/04</u>	Collected/Weight <u>07/19/04 10:53</u> <u>63.85 g</u>		
% solids <u>95.6</u>	% solids <u>95.6</u>	Custody/SAF No <u>F040-015-027</u> <u>F04-015</u>		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI- FIERS	RPD %	3σ TOT	PROT LIMIT
Tritium	-0.298	0.13	0.25	400	U	H	-0.063	0.14	0.25	U	-		
Technetium 99	0.052	0.50	0.90	15	U	TC	0.050	0.20	0.36	U	-		
Iodine 129	-0.333	0.56	1.3	2.0	U	I	-0.210	0.73	1.7	U	-		

200-MW-1 Characterization Sampling

QC-DUP#1 48414

DUPLICATES

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SUMMARY DATA SECTION

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>09/02/04</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

R407142-06

B197D8

MATRIX SPIKE

SDG <u>7055</u>	Client/Case no <u>Hanford</u>	SDG <u>H2645</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
MATRIX SPIKE	ORIGINAL	
Lab sample id <u>R407142-06</u>	Lab sample id <u>R407142-02</u>	Client sample id <u>B197D8</u>
Dept sample id <u>7055-006</u>	Dept sample id <u>7055-002</u>	Location/Matrix <u>216-A-4 Crib; 0.5'-3.0' SOLID</u>
	Received <u>07/23/04</u>	Collected/Weight <u>07/20/04 12:47 94.76 g</u>
% solids <u>96.1</u>	% solids <u>96.1</u>	Custody/SAF No <u>F040-015-028 F04-015</u>

ANALYTE	SPIKE pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2 $\sigma$ ERR pCi/g	ORIGINAL pCi/g	2 $\sigma$ ERR (COUNT)	REC 3 $\sigma$ LMTS % (TOTAL)	PROTOCOL LIMITS
Tritium	45.0	0.68	0.23	400	X	H	49.1	2.0	-0.018	0.13	92 85-115	60-140

200-MW-1 Characterization Sampling

QC-MS#2 48415

MATRIX SPIKES

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SUMMARY DATA SECTION

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>09/02/04</u>

# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

R407142-01

B19707

## DATA SHEET

SDG <u>7055</u>	Client/Case no <u>Hanford</u>	SDG <u>H2645</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R407142-01</u>	Client sample id <u>B19707</u>	
Dept sample id <u>7055-001</u>	Location/Matrix <u>216-A-4 Crib; 0.5'-3.0'</u>	<u>SOLID</u>
Received <u>07/23/04</u>	Collected/Weight <u>07/19/04 10:53</u>	<u>63.85 g</u>
% solids <u>95.6</u>	Custody/SAF No <u>F040-015-027</u>	<u>F04-015</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	-0.063	0.14	0.25	400	U	H
Technetium 99	14133-76-7	0.050	0.20	0.36	15	U	TC
Iodine 129	15046-84-1	-0.210	0.73	1.7	2.0	U	I

200-MW-1 Characterization Sampling

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>09/02/04</u>

**EBERLINE SERVICES / RICHMOND**

SAMPLE DELIVERY GROUP H2645

R407142-02

B197D8

**DATA SHEET**

SDG <u>7055</u>	Client/Case no <u>Hanford</u>	SDG <u>H2645</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R407142-02</u>	Client sample id <u>B197D8</u>	
Dept sample id <u>7055-002</u>	Location/Matrix <u>216-A-4 Crib; 0.5'-3.0'</u>	<u>SOLID</u>
Received <u>07/23/04</u>	Collected/Weight <u>07/20/04 12:47</u>	<u>94.76 g</u>
% solids <u>96.1</u>	Custody/SAF No <u>F040-015-028</u>	<u>F04-015</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	-0.018	0.13	0.21	400	U	H
Technetium 99	14133-76-7	-0.029	0.20	0.45	15	U	TC
Iodine 129	15046-84-1	0.301	0.93	<u>2.1</u>	2.0	U	I

200-MW-1 Characterization Sampling

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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Report date <u>09/02/04</u>

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

Test IC Matrix SOLID  
SDG 7055  
Contact Melissa C. Mannion

## METHOD SUMMARY

TECHNETIUM 99 IN SOIL  
BETA COUNTING

Client Hanford  
Contract No. 630  
Contract SDG H2645

## RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Technetium 99
Preparation batch 7095-092				
B197D7	R407142-01		7055-001	U
B197D8	R407142-02		7055-002	U
BLK (QC ID=48413)	R407142-04		7055-004	U
LCS (QC ID=48412)	R407142-03		7055-003	ok
Duplicate (R407142-01)	R407142-05		7055-005	- U

Nominal values and limits from method RDLs (pCi/g) 15  
200-MW-1 Characterization Sampling

## METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/g	MDA	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7095-092 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 092															
B197D7	R407142-01		0.36	1.00				96	100				35	08/17/04	GRB-202
B197D8	R407142-02		0.45	1.00				75	100				34	08/17/04	GRB-203
BLK (QC ID=48413)	R407142-04		0.60	1.00				91	50					08/17/04	GRB-201
LCS (QC ID=48412)	R407142-03		0.53	1.00				96	50					08/17/04	GRB-220
Duplicate (R407142-01) (QC ID=48414)	R407142-05		0.90	1.00				56	50				32	08/17/04	GRB-202

Nominal values and limits from method 15 1.00 20-105 50 180

PROCEDURES REFERENCE TC99\_TR\_SEP\_LSC  
CP-061 Determination of Moisture Content in Solid Samples  
rev 1  
CP-431 Technetium-99 Purification of Soil or Resin by  
Extraction Chromatography, rev 0  
CP-008 Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD MDA 0.57 ± 0.41  
FOR 5 SAMPLES YIELD 83 ± 35

## METHOD SUMMARIES

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## SUMMARY DATA SECTION

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Protocol Hanford  
Version Ver 1.0  
Form DVD-CMS  
Version 3.06  
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11 11 11 11 11



# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

## METHOD SUMMARY

IODINE 129 IN SOIL  
GAMMA SPECTROSCOPY

Test I Matrix SOLID  
SDG 7055  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Contract SDG H2645

## RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Iodine 129
------------------	------------------	-----------------	------------------	------------

Preparation batch 7095-092

B197D7	R407142-01	7055-001	U
B197D8	R407142-02	7055-002	U
BLK (QC ID=48413)	R407142-04	7055-004	U
LCS (QC ID=48412)	R407142-03	7055-003	ok
Duplicate (R407142-01)	R407142-05	7055-005	- U

Nominal values and limits from method RDLs (pCi/g) 2.0  
200-MW-1 Characterization Sampling

## METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/g	MDA	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT keV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
------------------	------------------	-----------------	---------------	-----	-----------	-------------	---------------	------------	----------	--------------	-------------	--------------	--------------	-------------------	------	----------

Preparation batch 7095-092 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 092

B197D7	R407142-01	1.7	1.00	38	1158	30	08/18/04	08/18	XSPEC-004
B197D8	R407142-02	2.1	1.04	33	609	30	08/18/04	08/19	XSPEC-004
BLK (QC ID=48413)	R407142-04	1.2	1.00	64	610		08/18/04	08/20	XSPEC-004
LCS (QC ID=48412)	R407142-03	2.3	1.00	58	663		08/18/04	08/19	XSPEC-004
Duplicate (R407142-01) (QC ID=48414)	R407142-05	1.3	1.00	48	982	32	08/18/04	08/20	XSPEC-004

Nominal values and limits from method 2.0 1.00 20-105 300 180

PROCEDURES	REFERENCE	I129_SEP_LEPS_GS
CP-061	Determination of Moisture Content in Solid Samples rev 1	
CP-024	Iodine-129, Sample Dissolution, rev 3	
CP-530	Iodine-129 Purification, rev 0	

AVERAGES ± 2 SD	MDA	1.7 ± 0.96
FOR 5 SAMPLES	YIELD	48 ± 26

## METHOD SUMMARIES

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## SUMMARY DATA SECTION

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

## METHOD SUMMARY

TRITIUM IN SOIL  
LIQUID SCINTILLATION COUNTING

Test H Matrix SOLID  
SDG 7055  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Contract SDG H2645

## RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Tritium
------------------	------------------	-----------------	------------------	---------

Preparation batch 7095-092

B197D7	R407142-01		7055-001	U
B197D8	R407142-02		7055-002	U
BLK (QC ID=48413)	R407142-04		7055-004	U
LCS (QC ID=48412)	R407142-03		7055-003	ok
Duplicate (R407142-01)	R407142-05		7055-005	- U
Spike (R407142-02)	R407142-06		7055-006	ok X

Nominal values and limits from method RDLs (pCi/g) 400  
200-MW-1 Characterization Sampling

## METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/g	MDA	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
------------------	------------------	-----------------	---------------	-----	-----------	-------------	---------------	------------	----------	--------------	-------------	--------------	--------------	-------------------	------	----------

Preparation batch 7095-092 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 092

B197D7	R407142-01		0.25	21.0				33		120			30	08/18/04	08/18	LSC-005
B197D8	R407142-02		0.21	22.7				34		120			29	08/18/04	08/18	LSC-005
BLK (QC ID=48413)	R407142-04		0.23	21.0				33		120				08/18/04	08/18	LSC-005
LCS (QC ID=48412)	R407142-03		0.25	21.0				33		120				08/18/04	08/18	LSC-005
Duplicate (R407142-01) (QC ID=48414)	R407142-05		0.25	<u>20.6</u>				33		120			30	08/18/04	08/18	LSC-005
Spike (R407142-02) (QC ID=48415)	R407142-06		0.23	22.3				33		120			30	08/18/04	08/19	LSC-005

Nominal values and limits from method 400 21.0 25 180

PROCEDURES	REFERENCE	TRITIUM_COX_LSC
CP-061		Determination of Moisture Content in Solid Samples rev 1
CP-218		Tritium in Soil Samples by Azeotropic Distillation, rev 1

AVERAGES ± 2 SD	MDA <u>0.24</u> ± <u>0.033</u>
FOR 6 SAMPLES	YIELD <u>33</u> ± <u>1</u>

## METHOD SUMMARIES

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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2645

## SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- \* LAB SAMPLE ID is the lab's primary identification for a sample.
  - \* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
  - \* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
  - \* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.
- QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.
- \* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2645

### PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- \* The preparation batches are shown in the same order as the Method Summary Reports are printed.
- \* Only analyses of planchets relevant to the SDG are included.
- \* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- \* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified.  
Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2645

## WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- \* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- \* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- \* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- \* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- \* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- \* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2645

## DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- \* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- \* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- \* ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- \* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- \* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
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Case no SDG H2645

## DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
  - B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
  - H Similar to 'L' except the recovery was high.
  - P The RESULT is 'preliminary'.
  - X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
  - 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- \* An MDA is underlined if it is bigger than its RDL.

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SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG\_H2645

## DATA SHEET

- \* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- \* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- \* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2645

### LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- \* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  1. The error of RESULT, including that introduced by rounding the result prior to printing.
 

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
  2. The error of ADDED.
  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2645

SDG 7055  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
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### DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- \* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- \* The second limit for the RPD is the larger of:
  1. A fixed percentage specified in the protocol.

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SAMPLE DELIVERY GROUP H2645

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Contact Melissa C. Mannion

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## DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- \* The RPD is underlined if it is greater than either limit.
- \* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- \* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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## REPORT GUIDE

Client Hanford  
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Case no SDG H2645

### MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- \* The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- \* The second limits are protocol defined upper and lower QC limits

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SAMPLE DELIVERY GROUP H2645

SDG 7055

Contact Melissa C. Mannion

Client Hanford

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Case no SDG H2645

GUIDE, cont.

## MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- \* The recovery is underlined (out of spec) if it is outside either of these ranges.

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SAMPLE DELIVERY GROUP H2645

SDG 7055

Contact Melissa C. Mannion

## REPORT GUIDE

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## METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- \* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- \* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- \* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- \* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- \* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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SDG 7055

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Case no SDG H2645

## METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- \* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- \* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- \* Aliquots are underlined if less than the nominal value specified for the method.
- \* Preparation factors are underlined if greater than the nominal value specified for the method.
- \* Dilution factors are underlined if greater than the nominal value specified for the method.
- \* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- \* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- \* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

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SDG 7055  
Contact Melissa C. Mannion

GUIDE, cont.

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## METHOD SUMMARY

- \* Count times are underlined if less than the nominal value specified for the method.
- \* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- \* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- \* Days Held are underlined if greater than the holding time specified in the protocol.
- \* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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SDG 7055

Contact Melissa C. Mannion

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Client Hanford

Contract No. 630

Case no SDG H2645

## METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

### REPORT GUIDES

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### SUMMARY DATA SECTION

Page 30

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 09/02/04

0000033

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F04-015-027		Page 1 of 1													
Collector Pope/Pfister/Hughes/Wiberg		Company Contact CS Cearlock		Telephone No. 372-9638		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days													
Project Designation 200-MW-1 Characterization Sampling and Analysis - Soil		Sampling Location 216-A-4 Crib; 0.5'-3.0'		H2645 (7055)		SAF No. F04-015		Air Quality <input type="checkbox"/>													
Ice Chest No. <u>ELC-00-001</u>		Field Logbook No. HNF-N-3861		COA 119144ES10		Method of Shipment Federal Express															
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <u>See PTR 13879</u>				Bill of Lading/Air Bill No. <u>See PTR 13879</u>															
POSSIBLE SAMPLE HAZARDS/REMARKS N/A  Special Handling and/or Storage Tie to WSCF Rad Screen: B19618				Preservation		Cool 4C	None														
				Type of Container		aG	aG														
				No. of Container(s)		1	1														
				Volume		120mL	60mL														
SAMPLE ANALYSIS				NO2/NO3 - 353.2; Oil & Grease - 413.1; Chromium Hex - 7196		Iodine-129; Technetium-99; Tritium - H3															
Sample No.		Matrix *		Sample Date		Sample Time															
B197D7		SOIL		7-19-04		1053															
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS								Matrix *  S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<u>Don O'Keefe</u>		<u>7/19/04 11:25am</u>		<u>Don O'Keefe</u>		<u>7/19/04 11:25am</u>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<u>Site FRIG</u>		<u>7/21/04 1306</u>		<u>R. PFISTER</u>		<u>7/21/04 1306</u>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<u>R. PFISTER</u>		<u>7/21/04 1513</u>		<u>MO-036 FRIG #1</u>		<u>7/21/04 1513</u>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<u>MO-036 FRIG #1</u>		<u>7/22/04 0700</u>		<u>M.A. Bunker</u>		<u>7/22/04 0700</u>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<u>M.A. Bunker</u>		<u>7/22/04 0700</u>		<u>FED EX</u>		<u>7/23/04 10:00</u>															
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time															
<u>FED EX</u>		<u>7/23/04 9:40</u>		<u>Don O'Keefe</u>		<u>7/23/04 10:00</u>															
LABORATORY SECTION		Received By		Title		Date/Time															
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time															

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F04-015-028		Page 1 of 1											
Collector Pope/Pfister/Hughes/Wiberg		Company Contact CS Cearlock		Telephone No. 372-9638		Project Coordinator TRENT, SJ		Price Code 8N      Data Turnaround 45 Days											
Project Designation 200-MW-1 Characterization Sampling and Analysis - Soil		Sampling Location 216-A-4 Crib; 12.5'-15'		42645 (7055)		SAF No. F04-015		Air Quality <input type="checkbox"/>											
Ice Chest No. <b>ERC-00-001</b>		Field Logbook No. HNF-N-3861		COA 119144ES10		Method of Shipment Federal Express													
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. <b>See PTR 13819</b>				Bill of Lading/Air Bill No. <b>See PTR 13819</b>													
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> N/A  <b>Special Handling and/or Storage</b> Tie to WSCF Rad Screen: B19619				Preservation		Cool 4C	None												
				Type of Container		aG	aG												
				No. of Container(s)		1													
				Volume		120mL	60mL												
<b>SAMPLE ANALYSIS</b>				NO2/NO3 - 353.7; Oil & Grease - 413.1; Chromium Hex - 7196		Iodine-129; Technetium-99; Tritium - H3													
Sample No.		Matrix *		Sample Date		Sample Time													
B197D8		SOIL		7/22/04		1247													
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>[Signature]</i>		7/20/04 1400		<i>[Signature]</i>		7/20/04 1400													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>[Signature]</i>		7/21/04 1306		<i>[Signature]</i>		7/21/04 1306													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>[Signature]</i>		7/21/04 1513		<i>[Signature]</i>		7/21/04 1513													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>[Signature]</i>		7/22/04 0700		<i>[Signature]</i>		7/22/04 0700													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>[Signature]</i>		7/23/04 0900		<i>[Signature]</i>		7/23/04 0900													
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time													
<i>[Signature]</i>		7/23/04 9:40		<i>[Signature]</i>		7/23/04 10:00													
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time													
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time													



## RICHMOND, CA LABORATORY

## SAMPLE RECEIPT CHECKLIST

Client: Fluor Hanford City Richland State WADate/Time received 7/23/04 9:40 CoC No. F04-015-027,028Container I.D. No. ERC 00-001 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

## INSPECTION

1. Custody seals on shipping container intact? Yes [ ☒ ] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [ ☒ ] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [ ☒ ] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [ ☒ ] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [ ☒ ]
6. Number of samples in shipping container: 2 Sample Matrix Soil
7. Number of containers per sample: 1 (Or see CoC         )
8. Samples are in correct container Yes [ ☒ ] No [ ]
9. Paperwork agrees with samples? Yes [ ☒ ] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [ ☒ ]
11. Samples are: In good condition [ ☒ ] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH          Preservative
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date
15. Inspected by [Signature] Date: 7/23/04 Time: 10:00 AM

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Ion Chamber Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

Alpha Meter Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

Beta/Gamma Meter Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

**Ayres, Doris E**

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**From:** Mix, Pauline D  
**Sent:** Wednesday, September 22, 2004 1:03 PM  
**To:** Trent, Stephen J  
**Cc:** Ayres, Doris E; Baird, William W (Bill); Dale, Troy F; Meznarich, Huei K  
**Subject:** RE: Drafts for F04-034 and F04-035

Steve

See Huei's comments below. thx

*Pauline D. Mix*

WSCF Client Services  
 Phone 372-1488  
 Cell 947-0751  
 FAX 372-0456  
 MSIN S3-30  
[Pauline D Mix@RL.gov](mailto:Pauline_D_Mix@RL.gov)

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**From:** Meznarich, Huei K  
**Sent:** Tuesday, September 21, 2004 3:17 PM  
**To:** Mix, Pauline D  
**Cc:** Baird, William W (Bill); Meznarich, Huei K  
**Subject:** RE: Drafts for F04-034 and F04-035

Pauline:

I have two comment for F04-034:

1. ICP Metals 6010A, please change to 6010B
2. Please remove 48 hr holding times for IC. 28 days for CI and sulfate (only CI and sulfate are requested).

No comment for F04-035.

Huei

-----Original Message-----

**From:** Mix, Pauline D  
**Sent:** Tuesday, September 21, 2004 2:02 PM  
**To:** Dale, Troy F; Fitzgerald, Scot L; Trechter, John E Jr.  
**Cc:** Baird, William W (Bill); Beebe, Kevin L; Meznarich, Huei K; Rice, Andrew D; Rich, Herlene; Sims, Vic T; Stauffer, Markus  
**Subject:** FW: Drafts for F04-034 and F04-035

Attached for your review and comment are draft copies of SAFs from the GRP. Comments, if any, are due to Doris ASAP. thx

*Pauline D. Mix*

000003

9/22/2004

**From:** Ayres, Doris E  
**Sent:** Monday, September 20, 2004 3:47 PM  
**To:** Clifford, James R; Thomas, Greg S; Baechler, Michael A; Johansen, Tamara M; Alexander, Debra J (Deb); Gent, Philip M; Dale, Troy F; Trechter, John E Jr.; Mix, Pauline D; Rich, Herlene  
**Cc:** Trent, Stephen J  
**Subject:** Drafts for F04-034 and F04-035

Please review the attached DRAFT SAFs F04-034 and F04-035. Please provide your comments/concurrence to issue to Steve Trent as soon as possible. Work can not begin on this sampling until the SAFs are finalized.

Doris

**Ayres, Doris E**

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**From:** Trent, Stephen J  
**Sent:** Wednesday, September 22, 2004 1:19 PM  
**To:** Melissa Mannion (mmannion@eberlineservices.com)  
**Cc:** Ayres, Doris E  
**Subject:** Cancellation of Analyses

Melissa,

We accidentally shipped you a bottle of material for isotopic uranium analysis on SAF F02-007 and F02-008 (sample numbers are B1BB11 through B1BB16). Please cancel the analyses.

Thanks,

Steve Trent  
Sample Management Project Coordinator  
Fluor Hanford - Groundwater Remediation Project  
Ph: (509) 373-5869  
Cell: (509) 947-9354  
EFax: (866) 252-5816  
Site Pager: 85-7344

00000000

9/22/2004

